

**IN THE CLAIMS:**

Please re-write the claims to read as follows:

- 1 1. (Previously Presented) A method for determining latency of a selected path in a com-  
2 puter network having a plurality of network nodes, the computer network further includ-  
3 ing a first entity disposed at one end of the selected path and a second entity disposed at a  
4 second end of the selected path, the method comprising the steps of:  
5       utilizing at least one path state set-up message formulated by the first entity and  
6       passed to each network node along the selected path to establish a path state at each net-  
7       work node along the selected path for identifying a traffic flow having predefined pa-  
8       rameters;  
9       implementing a source routing option to include in the path state setup message,  
10      the source routing option to provide a choice between strict source routing and loose  
11      source routing;  
12      forwarding messages matching the predefined parameters of the traffic flow to a  
13      next downstream network node along the selected path;  
14      generating a test message at the first entity, the test message addressed to the sec-  
15      ond entity and configured in accordance with the predefined parameters of the traffic  
16      flow;  
17      placing a time record in the test message;  
18      transmitting the test message from the first entity;  
19      in response to receiving the test message at each network node, forwarding the  
20      test message from the receiving network node to the next downstream network node  
21      along the selected path by virtue of the previously established path states;

22           in response to receiving the test message at a last downstream network node along  
23 the selected path, forwarding the test message to the second entity by virtue of the previ-  
24 ously established path states; and  
25           using the time record placed in the test message to determine the latency of the  
26 selected path.

1   2. (Original) The method of claim 1 wherein the predefined parameters of the traffic flow  
2 include at least a network layer address associated with the first entity and a network  
3 layer address associated with the second entity.

1   3. (Previously Presented) The method of claim 2 wherein the at least one path state setup  
2 message formulated at the first entity is addressed to the second entity and includes:  
3           the predefined parameters of the traffic flow; and  
4           a source routing option that lists, in sequential order, each network node along the  
5 selected path; and the method further comprises the steps of:  
6           in response to receiving the at least one path state setup message at each network  
7 node, forwarding the at least one path state setup message from the receiving network  
8 node to the next downstream network node along the selected path by virtue of the source  
9 routing option; and  
10          in response to receiving the at least one path state setup message at the last down-  
11 stream network node along the selected path, forwarding the at least one path state setup  
12 message to the second entity.

1   4. (Previously Presented) The method of claim 3 further comprising the steps of:  
2           formulating at least one path state reservation message at the second entity, the at  
3 least one path state reservation message addressed to the last downstream network node  
4 along the selected path and including the predefined parameters of the traffic flow;  
5           transmitting the at least one path state reservation message from the second entity  
6 into the computer network;

7 in response to receiving the at least one path state reservation message at each  
8 network node, including the last downstream network node, (1) establishing a path state  
9 corresponding to the predefined parameters of the traffic flow, and (2) sending at least  
10 one corresponding path state reservation message from the receiving network node to a  
11 next upstream network node;

12 in response to receiving the at least one path state reservation message at a last  
13 upstream network node along the selected path, forwarding the path state setup message  
14 to the first entity.

1 5. (Previously Presented) The method of claim 4 wherein the step of using the time re-  
2 cord placed in the test message comprises the steps of:

3 generating a second test message at the second entity, the second test message ad-  
4 dressed to the first entity and containing the time record from the received test message;  
5 transmitting the second test message from the second entity to the first entity;  
6 constraining the second test message to follow the selected path in the computer  
7 network;

8 upon receiving the second test message at the first entity, comparing the time re-  
9 cord with a current time to determine the latency of the selected path.

1 6. (Original) The method of claim 5 wherein the step of constraining comprises the steps  
2 of establishing a second path state at each network node along the selected path for iden-  
3 tifying a second traffic flow having predefined parameters, and for forwarding messages  
4 matching the predefined parameters of the traffic flow to the next upstream network node  
5 along the selected path, wherein

6 the second test message generated by the second entity is configured in accor-  
7 dance with the predefined parameters of the second traffic flow.

1 7. (Original) The method of claim 4 wherein the step of using comprises the steps of:

2 providing a clock management facility at each of the first and second entities;

3 synchronizing the clock management facilities at the first and second entities;  
4 upon receiving the test message at the second entity, comparing the time record  
5 with a current time to determine the latency of the selected path.

1 8. (Previously Presented) A computer readable medium containing executable program  
2 instructions for generating a path state setup message, the path state setup message for  
3 establishing a path state at one or more network nodes along a selected path between first  
4 and second entities of a computer network, the executable program instructions compris-  
5 ing steps for:

6 inserting into the path state setup message a source routing option indicator that  
7 lists one or more network nodes along the selected path;

8 implementing a source routing option in response to the source routing option in-  
9 dicator in the path state setup message, the source routing option to provide a choice be-  
10 tween strict source routing and loose source routing; and

11 inserting into the path state setup message one or more parameters that define a  
12 selected traffic flow that is to be associated with a test message for determining a latency  
13 of the selected path, wherein

14 the path state setup message is generated by the first entity and passed to each of  
15 the one or more network nodes along the selected path.

1 9. (Original) The computer readable medium of claim 8 comprising further program in-  
2 structions for listing each of the network nodes along the selected path in the source rout-  
3 ing option.

1 10. (Original) The computer readable medium of claim 9 comprising further program in-  
2 structions for rendering the path state setup message free from having a sender traffic  
3 specifier.

1 11. (Original) The computer readable medium of claim 10 comprising further program  
2 instructions for inserting into the path state setup message a router alert option.

1 12. (Original) The computer readable medium of claim 8 comprising further program in-  
2 structions for rendering the path state setup message free from having a sender traffic  
3 specifier.

1 13. (Previously Presented) A network node for use in a computer network, the network  
2 node disposed along a selected path between first and second entities, the network node  
3 comprising:

4 a plurality of interfaces configured to receive and forward messages;  
5 an options processor in communicating relationship with the plurality of inter-  
6 faces, the options processor configured to implement one or more options included in a  
7 path state setup message received from the first entity and identifying a traffic flow; and  
8 a signaling protocol processor in communicating relationship with the options  
9 processor,

10 wherein the options processor and signaling protocol processor cooperate to im-  
11 plement a source routing option included in the path state setup message by initializing a  
12 path state associated with the traffic flow and forwarding the path state setup message to  
13 a next network node as identified in the source routing option, the source routing option  
14 to provide a choice between strict source-routing and loose source-routing.

1 14. (Original) The network node of claim 13 further wherein the signaling protocol proc-  
2 essor, in response to receiving a path state reservation message at the network node, es-  
3 tablishes the previously initialized path state.

1 15. (Original) The network node of claim 14 wherein the path state reservation message  
2 includes one or more parameters that define a selected traffic flow, the network node fur-

3 ther comprising a packet classifier operatively coupled to the signaling protocol proces-  
4 sor,  
5 whereby the signaling protocol processor configures the packet classifier to identify for  
6 messages matching the one or more parameters of the selected traffic flow.

1 16. (Original) The network node of claim 15 further comprising a packet scheduler  
2 operatively coupled to the signaling protocol processor, whereby the signaling protocol  
3 processor establishes a short-cut at the packet scheduler for application to messages iden-  
4 tified by packet classifier as matching the one or more parameters of the selected traffic  
5 flow.

1 17. (Original) The network node of claim 16 wherein the signaling protocol processor is a  
2 resource reservation protocol processor.

1 18. (Previously Presented) An apparatus for generating a path state setup message, the  
2 path state setup message for establishing a path state at one or more network nodes along  
3 a selected path of a computer network between first and second entities, the apparatus  
4 comprising:

5 means for inserting into the path state setup message a source routing option that  
6 lists one or more network nodes along the selected path;

7 means for implementing a source routing option in response to the source routing  
8 option indicator in the path state setup message, the source routing option to provide a  
9 choice between strict source routing and loose source routing; and

10 means for inserting into the path state setup message one or more parameters that  
11 define a selected traffic flow that is to be associated with a test message for determining a  
12 latency of the selected path, wherein

13 the apparatus is disposed at the first entity and the path state setup message is  
14 generated by and transmitted from the first entity.

1 19. (Previously Presented) An apparatus as defined in claim 18 comprising:  
2 means for listing each of the network nodes along the selected path in the source  
3 routing option.

1 20. (Previously Presented) An apparatus as defined in claim 18 comprising:  
2 means for rendering the path state setup message free from having a sender traffic  
3 specifier.

21 – 30 (Cancelled)